	Time Stamp	Comments	Error Definition	Errors
1	2003/11/24 08:00			0
2	2003/11/24 07:43			0
3	2003/11/24 07:52			0
4	2003/11/24 07:52			0
5	2003/11/24 08:00			0
6	2003/11/24 08:01			0

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	990	carriage adj8 servo	USPAT
2	BRS	L2	17	1 and (vibration same spindle)	USPAT
3	BRS	L3	258	1 and (spindle same driv$5)	USPAT
4	BRS	L4	25	3 and (lpf)	USPAT
5	BRS	L5	433	carriage adj8 servo	US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
6	BRS	L8	2	7 and lpf	US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
7	BRS	L6	4	5 and (vibrat$5 same spindle)	US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
8	BRS	L7	63	5 and (spindle same driv$5)	US-PGPUB; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	1187	369/44.27	USPAT
2	BRS	L2	72	1 and (carriage same servo)	USPAT
3	BRS	L3	69	2 and (driv$5 same signal)	USPAT
4	BRS	L4	2824	carriage same servo	USPAT
5	BRS	L5	112	4 and ((puls$5 adj5 driv$5) same carriage)	USPAT
6	BRS	L6	1366	carriage same servo	US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
7	BRS	L7	13	6 and ((puls$5 adj5 driv$5) same carriage)	US-PGPUB; EPO; JPO; DERWENT; IBM_TDB

	Time Stamp	Comments	Error Definition	Errors
1	2003/11/20 15:40			0
2	2003/11/20 15:50			0
3	2003/11/20 15:40			0
4	2003/11/20 15:55			0
5	2003/11/20 15:52			0
6	2003/11/20 15:55			0
7	2003/11/20 15:56			0

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	718	carriage adj5 servo	USPAT
2	BRS	L2	610	1 and (puls$5 ajd5 signal)	USPAT
3	BRS	L7	146	2 and (puls$5 adj5 generat$5)	USPAT
4	BRS	L8	146	1 and (puls$5 adj5 generat$5)	USPAT
5	BRS	L9	324	carriage adj5 servo	US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
6	BRS	L10	15	9 and (puls$5 adj5 signal)	US-PGPUB; EPO; JPO; DERWENT; IBM_TDB

	Time Stamp	Comments	Error Definition	Errors
1	2003/11/20 13:24			0
2	2003/11/20 13:18			0
3	2003/11/20 13:19			0
4	2003/11/20 13:19			0
5	2003/11/20 13:24			0
6	2003/11/20 13:25			0
7	2003/11/20 13:25			0
8	2003/11/20 13:25			0

PAT-NO: JP407192416A

DOCUMENT-IDENTIFIER: JP 07192416 A

TITLE: DRIVE CONTROLLER

PUBN-DATE: July 28, 1995

INVENTOR-INFORMATION:
NAME
ARETSUKUSU, BURATSUDOSHIYOO
ABE, HIROYUKI
KIYOURA, KAZUHIRO
KATO, KIYOSHI
NONAKA, YOSHIYA

ASSIGNEE-INFORMATION:

NAME	COUNTRY
PIONEER ELECTRON CORP	N/A

APPL-NO: JP05333687

APPL-DATE: December 27, 1993

INT-CL (IPC): G11B021/10

ABSTRACT:

PURPOSE: To provide a carriage servo device capable of stably operating without being affected by the eccentricity of a disk.

CONSTITUTION: A pickup 1 reads an information signal from the disk DK, and a preamplifier 2 detects a tracking error signal. On the other hand, a carriage motor 8 drives the pickup 1 in the direction roughtly orthogonal to an information track. A DC component of the tracking error signal A including a DC component is extracted (a waveform B) by a low-pass filter 4 being a DC component separation means through a tracking equalizer 3 to be inputted to a comparator 5. In the comparator 5, a reference voltage VZ is compared with the tracking error signal B, and a timing pulse being the on/off timing of a drive control signal is generated. A drive signal generation circuit 6 outputs the drive control signal C by the timing pulse, and controls the carriage motor 8, and therefore, the stable drive control operation can be performed.

EAST Browser - L10: (15) 9 and (puls$... 0020041544 A1 | Tag: S | Doc: 5/15 | Forme 0

File Edit View Tools Window Help

PGPUB-DOCUMENT-NUMBER: 20020041544

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020041544 A1

TITLE: Carriage servo control system and information-recording medium in which program for carriage servo control is recorded

PUBLICATION-DATE: April 11, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE
Sakamoto, Masato	Kawagoe-shi		JP	
Suzuki, Yasutaka	Kawagoe-shi		JP	

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
PIONEER CORPORATION				03

APPL-NO: 09/972574

DATE FILED: October 4, 2001

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	P2000-307601	2000JP-P2000-307601	October 6, 2000

INT-CL: [07], G11B007/095

US-CL-PUBLISHED: 369/44.27

US-CL-CURRENT: 369/44.27

REFERENCE-FIGURES: 1

ABSTRACT:

For reproducing and/or recording information from/onto an optical disc, a pickup is used to detect a target track on the disc through an optical beam. In carriage servo control, movement of the pickup is servo-controlled in the radial direction of the optical disc. In this control, a tracking error signal is produced by a preamplifier. A pulse signal is produced, in which the period of the pulse signal is set to a constant amount corresponding to the accuracy of movement of the pickup. Based on the pulse signal and the tracking error signal, a carriage control signal to move the pickup is produced. The carriage control signal is then supplied to a carriage motor by a driver, so that the pickup is moved.

EAST Browser - L10: (05) 9 and (puls)... 0020041544 | Tag: S | Doc: 5/15 | "Full" 1/... tal images 16)

File Edit View Tools Window Help

PGPUB-DOCUM

PGPUB-FILIN

DOCUMENT-ID

TITLE:

PUBLICATION

INVENTOR-IN
NAME
Sakamoto, M
Suzuki, Yas

ASSIGNEE-IN
NAME
PIONEER COR

APPL-NO:

DATE FILED:

FOREIGN-APP
COUNTRY A
JP P

INT-CL:

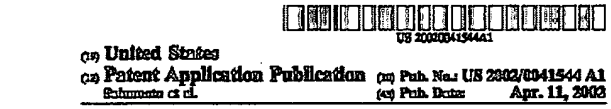
US-CL-PUBLI

US-CL-CURRE

REFERENCE-F

ABSTRACT:

For reprodu
pickup is u
In carriage
radial dire
is produced
of the puls
of movement
signal, a c
control sig
pickup is m



US 20020041544A1

(19) **United States**
(12) **Patent Application Publication** (10) Pub. No.: US 2002/0041544 A1
Sakamoto et al. (43) Pub. Date: Apr. 11, 2002

(54) CARRIAGE SERVO CONTROL SYSTEM AND INFORMATION-RECORDING MEDIUM IN WHICH PROGRAM FOR CARRIAGE SERVO CONTROL IS RECORDED

(75) Inventors: Hiroshi Sakamoto, Kawaguchi-shi (JP); Yasuhiro Suzuki, Kawaguchi-shi (JP)

Correspondence Address:
LADAS & PARRY
Suite 2100
5200 Wilshire Boulevard
Los Angeles, CA 90036-6870 (US)

(73) Assignee: PIONEER CORPORATION

(21) Appl. No.: 09/972,574

(22) Filed: Oct. 4, 2001

(30) Foreign Application Priority Data

Oct. 4, 2000 (JP) P2000-305021

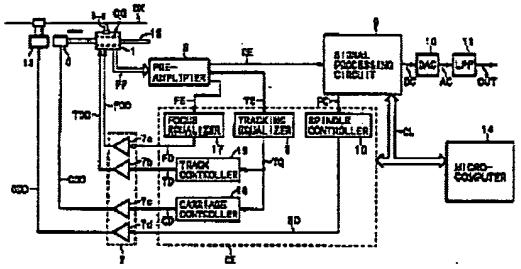
Publication Classification

(51) Int. Cl.[7] G11B 20/10

(52) U.S. Cl. 360/44.37

(57) ABSTRACT

For reproducing and/or recording information from/into an optical disc, a pickup is used to detect a target track on the disc through an optical beam. In carriage servo control, movement of the pickup in cross-controlled in the radial direction of the optical disc. In this control, a tracking error signal is produced by a preamplifier. A pulse signal is produced, in which the period of the pulse signal is set to a constant amount corresponding to the accuracy of movement of the pickup. Based on the pulse signal and the tracking error signal, a carriage control signal to move the pickup is produced. The carriage control signal is then supplied to a carriage motor by a driver, so that the pickup is moved.



EAST Browser - L10: (15) 9 and (puls$... 20010026509 A1 | Tag: S | Doc: 9/15 | Forma...

File Edit View Tools Window Help

PGPUB-DOCUMENT-NUMBER: 20010026509

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010026509 A1

TITLE: Carriage servo apparatus, information reproduction apparatus and carriage servo control method

PUBLICATION-DATE: October 4, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE
Kimikawa, Yuichi	Kawagoe-shi		JP	

APPL-NO: 09/ 816234

DATE FILED: March 26, 2001

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	P2000-88565	2000JP-P2000-88565	March 24, 2000

INT-CL: [07], G11B007/00

US-CL-PUBLISHED: 369/44.32, 369/53.18

US-CL-CURRENT: 369/44.32, 369/53.18

REFERENCE-FIGURES: 4

ABSTRACT:

A carriage servo apparatus according to the present invention comprises: a carriage for supporting a pickup that records or reproduces information relevant to an information recording face; and a carriage motor for moving the carriage in a direction parallel to the information recording face based on a motor drive signal. This carriage servo apparatus further comprises a microcomputer for detecting a minimum value of a motor drive signal required for moving the carriage from its still state, and setting a motor drive signal when recording or reproducing information, based on the detected minimum value.

PAT-NO: JP02002117557A

DOCUMENT-IDENTIFIER: JP 2002117557 A

TITLE: CARRIAGE SERVO CONTROLLER AND INFORMATION RECORDING MEDIUM RECORDED WITH HOLOGRAM FOR CARRIAGE SERVO CONTROL

PUBN-DATE: April 19, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
SAKAMOTO, MASAHITO	N/A
SUZUKI, YASUTAKA	N/A

ASSIGNEE-INFORMATION:

NAME	COUNTRY
PIONEER ELECTRONIC CORP	N/A

APPL-NO: JP2000307601

APPL-DATE: October 6, 2000

INT-CL (IPC): G11B007/09, G11B007/085

ABSTRACT:

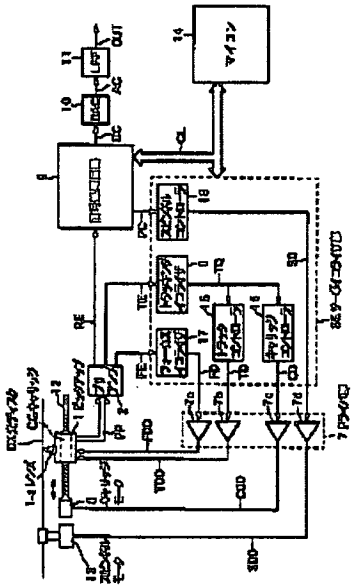
PROBLEM TO BE SOLVED: To porovide a carriage servo controller which allows the execution of the carriage servo control complying with a design value, is capable of decreasing the man-hours for design by an improvement in the degree of freedom in design, is capable of easily executing the desired carriage servo control and is adaptable to diversified applications.

SOLUTION: This carriage servo controller has a preamplifier which forms a tracking error signal when the radial movement of a pickup of at least either recording or reproducing information to or from the tracks on an optical disk by irradiating the tracks with a light beam is subjected to carriage servo control, a pulse forming section 27 which forms a pulse signal PS having a specified period corresponding to the moving accuracy of the pickup, a multiplier 28 which forms a carriage control signal CD to move the pickup 1 in accordance with the formed pulse signal PS and the tracking error signal and a driver section which moves the pickup by impressing the formed carriage control signal CD to a carriage motor.

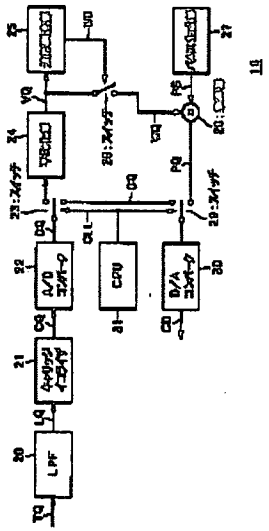
25…波形整形部
27…パルス生成部
28…発振部
31…CPU
S…情報再生装置
SE…サーボイコライザ部
DK…光ディスク
CG…キャリッジ
PP…検出信号
RE…再生信号
FE…フォーカスエラー信号
TE…トラッキングエラー信号
CL…制御信号
DC…位号信号
PC…スピンドル制御信号
SD…回転制御信号
SDD…スピンドル駆動信号
AC…アナログ位号信号

OUT…出力信号
FD…フォーカス制御信号
FDD…フォーカス駆動信号
TQ…トラッキングイコライザ信号
TD…トラッキング制御信号
TDD…トラッキング駆動信号
CD…キャリッジ制御信号
CDD…キャリッジ駆動信号
CLL…制御信号
LQ…低域イコライザ信号
CQ…キャリッジイコライザ信号
DQ…ディジタルイコライザ信号
VQ…平均化イコライザ信号
WD…ウインドウ信号
WQ…スイッチングイコライザ信号
PS…パルス信号
PQ…パルスキャリッジ信号
PD…スイッチングパルス信号

【図1】



【図2】



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PGPUB-DOCUM

PGPUB-FILIN

DOCUMENT-ID

TITLE:

PUBLICATION

INVENTOR-IN
NAME
Kimikawa, Y

APPL-NO:

DATE FILED:

FOREIGN-APP
COUNTRY A
JP P

INT-CL:

US-CL-PUBLI

US-CL-CURRE

REFERENCE-F

ABSTRACT:

A carriage
carriage fo
relevant to
carriage in
motor drive
microcomput
for moving
when record

US 20010026509A1

(19) **United States**
(12) **Patent Application Publication** (10) Pub. No.: US 2001/0026509 A1
Kimikawa (43) Pub. Date: Oct. 4, 2001

(54) CARRIAGE DRIVE APPARATUS, INFORMATION DISTRIBUTION APPARATUS AND CARRIAGE DRIVE CONTROL METHOD

(76) Inventor: Yuichi Kimikawa, Kanagawa-ken (JP)

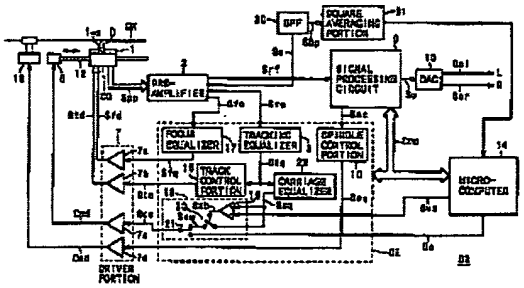
Correspondence Address:
FITZPATRICK, CELLA, HARPER & SCINTO
277 Park Avenue
New York, NY 10172 (US)

(21) Appl. No.: 09/816,294
(22) Filed: Mar. 26, 2001
(30) Foreign Application Priority Data
Mar. 29, 2000 (JP) P2000-092457

Publication Classification
(51) Int. Cl.[7] G11B 7/00
(52) U.S. Cl. 369/44.32; 369/53.18

(57) ABSTRACT

A carriage drive apparatus according to the present invention comprises a carriage for supporting a pickup that records or reproduces information relevant to an information recording face; and a carriage motor for moving the carriage in a direction parallel to the information recording face based on a motor drive signal. This carriage drive apparatus further comprises a microcomputer for detecting a minimum value of a motor drive signal required for moving the carriage from its still state, and using a motor drive signal value corresponding or equivalent information, based on the detected minimum value.



EAST Browser - L10: (15) 9 and (puls... 195750 A2 | Tag: S | Doc: 13/15 | "Full" 1/1 ...al images 18)

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PUB-NO:

DOCUMENT-IDENTIFIER:

TITLE:

PUBN-DATE:

INVENTOR-INFORMATION
NAME
SAKAMOTO, MASATO

ASSIGNEE-INFORMATION
NAME
PIONEER CORP

APPL-NO: EP013

APPL-DATE: Octob

PRIORITY-DATA: JP20

INT-CL (IPC): G11B0

ABSTRACT:

CHG DATE=20020503
optical disc, a pick
optical beam. In ca
servo-controlled in
a tracking error sig
produced, in which t
corresponding to the
pulse signal is chan
changed pulse signal
the tracking error s
carriage control sig
the pickup is moved.

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 195 750 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
10.04.2002 Bulletin 2002/15

(51) Int Cl.7: G11B 7/095

(21) Application number: 01203451.2

(22) Date of filing: 03.10.2001

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 03.10.2000 JP 2000303702

(71) Applicant: Pioneer Corporation
Tokyo-to (JP)

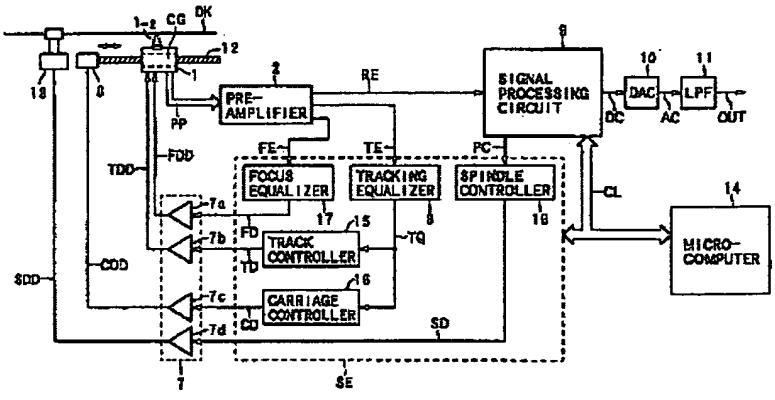
(72) Inventor: Sakamoto, Masato,
c/o Pioneer Corporation
Kawagoe-shi, Saitama-ken (JP)

(74) Representative: Tennant, Victoria Jayne et al
Fry Heath & Spence,
The Old College,
53 High Street
Horley, Surrey RH6 7BN (GB)

(54) Carriage servo control system and information-recording medium in which program for carriage servo control is recorded

(57) For reproducing information recorded on an optical disc, a pickup is used to detect a target track on the disc through an optical beam. In carriage servo control, movement of the pickup is servo-controlled in the radial direction of the optical disc. In this control, a tracking error signal is produced by a preamplifier. A pulse signal is produced, in which the period of the pulse signal is set to a constant amount corresponding to the accuracy of movement of the pickup. The duty ratio of the pulse signal is changed based on characteristic of the error signal, so that a changed pulse signal is produced. The changed pulse signal is multiplied by the tracking error signal, so that a carriage control signal is produced. The carriage control signal is supplied to a carriage motor by a driver, so that the pickup is moved.

FIG. 1



EP 1 195 750 A2

Printed by Jouve, 75001 PARIS (FR)

PUB-NO: EP001195750A2

DOCUMENT-IDENTIFIER: EP 1195750 A2

TITLE: Carriage servo control system and information-recording medium in which program for carriage servo control is recorded

PUBN-DATE: April 10, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
SAKAMOTO, MASATO	JP

ASSIGNEE-INFORMATION:

NAME	COUNTRY
PIONEER CORP	JP

APPL-NO: EP01308451

APPL-DATE: October 3, 2001

PRIORITY-DATA: JP2000307602A (October 6, 2000)

INT-CL (IPC): G11B007/085

ABSTRACT:

CHG DATE=20020503 STATUS=O> For reproducing information recorded on an optical disc, a pickup is used to detect a target track on the disc through an optical beam. In carriage servo control, movement of the pickup is servo-controlled in the radial direction of the optical disc. In this control, a tracking error signal is produced by a preamplifier. A pulse signal is produced, in which the period of the pulse signal is set to a constant amount corresponding to the accuracy of movement of the pickup. The duty ratio of the pulse signal is changed based on characteristic of the error signal, so that a changed pulse signal is produced. The changed pulse signal is multiplied by the tracking error signal, so that a carriage control signal is produced. The carriage control signal is supplied to a carriage motor by a driver, so that the pickup is moved. <IMAGE>

PAT-NO: JP02002117556A

DOCUMENT-IDENTIFIER: JP 2002117556 A

TITLE: CARRIAGE SERVO CONTROLLER AND INFORMATION RECORDING MEDIUM RECORDED WITH HOLOGRAM FOR CARRIAGE SERVO CONTROL

PUBN-DATE: April 19, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
SAKAMOTO, MASAHITO	N/A

ASSIGNEE-INFORMATION:

NAME	COUNTRY
PIONEER ELECTRONIC CORP	N/A

APPL-NO: JP2000307602

APPL-DATE: October 6, 2000

INT-CL (IPC): G11B007/09

ABSTRACT:

PROBLEM TO BE SOLVED: To provide a carriage servo controller which allows the execution of the carriage servo control complying with a design value, is capable of decreasing the man-hours for design by an improvement in the degree of freedom in design, is capable of easily executing the desired carriage servo control and is adaptable to diversified applications.

SOLUTION: This carriage servo controller has a preamplifier which forms a tracking error signal when the radial movement of a pickup o reproducing information from the tracks on an optical disk by a light beam is subjected to carriage servo control, a pulse forming section 27 which forms a pulse signal PS having a specified period corresponding to the moving accuracy of the pickup, a duty ratio control section 33 which forms a changed pulse signal PSS by changing the duty ratio of the pulse signal PS in accordance with the characteristics of the tracking error signal, a multiplier 28 which forms a carriage control signal CD in accordance with the changed pulse signal PSS and the tracking error signal and driver section which moves the pickup by impressing the formed carriage control signal CD to a carriage motor.

(19)日本国特許庁（JP）　(12)公開特許公報（A）　(11)特許出願公開番号
特開2002－117556
(P2002－117556A)
(43)公開日　平成14年4月19日(2002.4.19)

(51)Int.Cl.'	識別記号	FI	テーマコード'(参考)
G11B 7/09		G11B 7/09	C 5D118

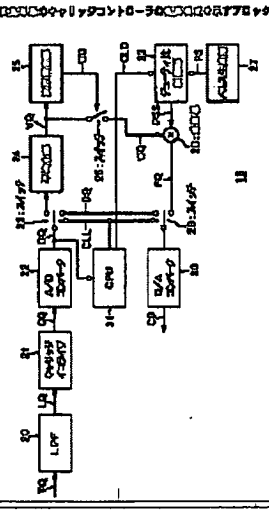
審査請求 未請求　請求項の数8　OL　（全 14 頁）

(21)出願番号　特願2000－307602(P2000－307602)
(22)出願日　平成12年10月6日(2000.10.6)

(71)出願人　000005016
パイオニア株式会社
東京都目黒区目黒1丁目4番1号
(72)発明者　佐々　和人
埼玉県川越市大字山田字西町25番地1　パイオニア株式会社川越工場内
(74)代理人　100063565
弁理士　石川　泰男
Fターム(参考)　5D118 AA15 AA18 BA01 CA15

(54)【発明の名称】　キャリッジサーボ制御回路及びキャリッジサーボ制御用プログラムが記録された記録媒体

(57)【要約】
【課題】　設計変更のキャリッジサーボ制御を実行させることができ、設計自由度が向上することにより設計工数を低減し容易に所望のキャリッジサーボ制御を実現し得、更に多様な用途に応じ得るキャリッジサーボ制御装置を提供する。
【解決手段】　光ビームにより光ディスク上のトラックに対して情報の再生を行うピックアップの半径方向の移動をキャリッジサーボ制御する場合に、トラッキングエラー信号を生成するプリアンプと、ピックアップの移動速度に対応した一定の周期を有するパルス信号ＰＳを生成するパルス生成部２７と、トラッキングエラー信号の特性に基づいてパルス信号ＰＳにおけるデューティ比を変更し変更パルス信号ＰＳＳを生成するデューティ比制御部３３と、変更パルス信号ＰＳＳとトラッキングエラー信号とに基づいてキャリッジ制御信号ＣＤを生成する積分部２８と、当該生成されたキャリッジ制御信号ＣＤをキャリッジモータに印加しピックアップを移動させるドライバ部と、を備える。



PGPUB-DOCUMENT-NUMBER: 20020041543

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020041543 A1

TITLE: Carriage servo control system and information-recording medium in which program for carriage servo control is recorded

PUBLICATION-DATE: April 11, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE
Sakamoto, Masato	Kawagoe-shi		JP	

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
PIONEER CORPORATION				03

APPL-NO: 09/ 972441

DATE FILED: October 5, 2001

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	P2000-307602	2000JP-P2000-307602	October 6, 2000

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ABSTRACT:

For reproducing information recorded on an optical disc, a pickup is used to detect a target track on the disc through an optical beam. In carriage servo control, movement of the pickup is servo-controlled in the radial direction of the optical disc. In this control, a tracking error signal is produced by a preamplifier. A pulse signal is produced, in which the period of the pulse signal is set to a constant amount corresponding to the accuracy of movement of the pickup. The duty ratio of the pulse signal is changed based on characteristic of the error signal, so that a changed pulse signal is produced. The changed pulse signal is multiplied by the tracking error signal, so that a carriage control signal is produced. The carriage control signal is supplied to a carriage motor by a driver, so that the pickup is moved.

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(54) CARRIAGE DRIVE CONTROL SYSTEM AND INFORMATION-RECORDING MEDIUM IN WHICH PROGRAM FOR CARRIAGE DRIVE CONTROL IS RECORDED

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(57) ABSTRACT

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